

**Abstract****Light source with electron cyclotron resonance**

5

The light source comprises an emitter (4) which, by means of at least one antenna (3), creates an ultra high-frequency electromagnetic wave in a sealed chamber (1) and which provides the lamp with power. The chamber (1) has a wall that is transparent to light and contains a gas at low pressure.

10 A permanent magnet (2) creates a static magnetic field inside the chamber (1). The respective values of the static magnetic field and of the frequency of the electromagnetic wave are determined such as to cause an electron cyclotron resonance inside the chamber (1). The emitter (4), antenna (3) and magnet (2) are disposed in relation to the chamber (1) in such a way as to free a solid angle of at least  $2\pi$  steradians for the light. The antenna (3) can be disposed inside the chamber (1) and can, optionally, be formed by the magnet (2). The magnet is substantially enveloped by the chamber (1).

(Figure 1)